

## **REMARKS**

### **I. Claim Amendments**

The restriction requirement of record has been made final. Claims 6-12 and 14-16, drawn to a non-elected invention, are withdrawn from further consideration.

Claim 1 has been amended to more clearly describe the structural features of the claimed group of polymeric reagents. Specifically, amended claim 1 recites that the isonitrile moiety of the polymeric reagent is linked to the linker moiety by a covalent bond that cleaves when treated with acid. Support for the amendment is provided by claim 1, as originally filed, and by the specification as a whole, e.g., by Figure 4, page 16.

Applicant submits that no new matter has been introduced by any amendment herein.

### **II. Abstract**

The Examiner alleges that the application, as originally filed, did not include an Abstract as required by 37 C.F.R. § 1.72(b). Accordingly, submission of an Abstract on a separate sheet is required.

Applicant's file shows that an Abstract was submitted with the application on February 6, 2001 as evidenced by the PTO's date stamp on Applicant's return postcard which accompanied the application. The attached copy of the return postcard clearly shows that an Abstract on a separate sheet was submitted concurrently with the national stage application and received by the PTO on February 6, 2001. Nevertheless, a duplicate copy of the Abstract as filed is submitted concurrently herewith for entry in the application file.

### **III. Rejection under 35 U.S.C. § 112- first paragraph**

Claims 1 and 13 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor had possession of the claimed invention. The Examiner alleges that the instant specification discloses only limited examples of the claimed reagents, and that this disclosure is neither representative of the claimed genus, nor does it represent a substantial portion of the claimed genus.

The claimed reagents comprise (a) a polymer support and (b) a linker moiety bearing an acid-labile isonitrile group. Broad categories of polymer supports (a) which can be used in the practice of the invention, and specific examples of these supports, are given in the specification on pages 8-9. With regard to the linker moieties (b), any linker moiety bearing an isonitrile moiety can be used in the practice of the invention *as long as the covalent bond between the isonitrile moiety and the linker moiety is cleaved upon application of acid* (page 9; and claim 1). Specific examples of linker moieties which have particularly advantageous properties are given in the specification at pages 9-10. Furthermore, examples of reagents which are particularly advantageous are provided on pages 5-7.

Therefore, given Applicant's disclosure and the numerous examples presented therein, and the knowledge possessed by one of ordinary skill in the art, the ordinary practitioner would readily comprehend the scope of the invention as described by the claims. As originally filed, the specification provides a written description and examples disclosing the structural relationship between the isonitrile moiety and linker moiety. Accordingly, it is clear that Applicant possessed the claimed invention at the time of filing. Furthermore, because only an enabling disclosure is required, Applicant need not describe all actual embodiments of the invention. In this regard, Applicant refers to MPEP 2164.02.

The Examiner asserts that the claimed compounds should be described in terms of their structure, rather than their function. As discussed in Section I above, Applicant has amended claim 1 to structurally describe the claimed reagents. Amended claim 1 recites that the isonitrile moiety of the polymeric reagent is linked to the linker moiety by a covalent bond that cleaves when treated with acid. Accordingly, the reagents of claim 1 have been described structurally rather than functionally, and the rejection of claims 1 and 13 under 35 U.S.C. § 112, first paragraph, should be withdrawn.

#### **IV. Rejection under 35 U.S.C. § 112- second paragraph**

Claims 1-5 and 13 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. The Examiner alleges that the expression "acid labile isonitrile moiety" is a relative term which is not defined by the claims or by the specification.

Applicant disagrees. The expression "acid labile isonitrile" is defined in the specification at page 7, lines 16-18. In these lines, the expression " 'acid labile isonitrile' denotes an isonitrile moiety which is cleaved from the linker when treated with aqueous trifluoroacetic acid (95%) at room temperature with a half time of less than 30 minutes". Therefore, an acid labile isonitrile moiety is clearly defined by the specification, and one of ordinary skill in the art would not find the expression indefinite.

In addition, the Examiner alleges that the expression "cleavable at the CN functionality" is confusing and has no meaning. Although Applicant disagrees that the quoted expression is confusing, Applicant has amended claim 1 to recite the structural linkage of the isonitrile moiety to the linker group. In this regard, amended claim 1 recites that the acid labile isonitrile moiety is linked to the linker moiety by a covalent bond that cleaves when treated with acid. Therefore, the isonitrile is joined to the linker moiety by a covalent bond, and it is this bond which is cleaved in an acidic environment.

Withdrawal of the rejection of claims 1-5 and 13 under 35 U.S.C. § 112, second paragraph, is respectfully requested.

#### **V. The claimed invention**

The claimed invention is directed to novel polymeric reagents which are useful in solution and solid-phase synthesis. The reagents comprise a polymer moiety and a linker moiety having an acid-labile isonitrile group. The covalent bond between the linker moiety and the isonitrile moiety cleaves when treated with acid. Advantageously, the claimed reagents can be used to prepare organic and heterocyclic compounds which are not easily obtainable by other synthetic pathways.

**VI. Rejection under 35 U.S.C. § 102(b)**

Claims 1 and 13 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Short et al., of record. The Examiner alleges that Short discloses a polymer supported isonitrile reading on claim 1. The Examiner alleges that Scheme 3 of Short discloses a polymeric reagent which is an isocyanide bound to a Wang resin, and that the isocyanide is cleaved from the resin with trifluoroacetic acid. The Examiner further alleges that Short discloses that the compounds shown in Scheme 3 are cleaved from the position where the CN functionality was previously present.

Applicant respectfully disagrees and submits that the claimed genus of polymeric reagents is distinguishable over Short's Wang resin. Applicant refers to the arguments in the response, mailed February 5, 2003, to the restriction requirement dated October 9, 2002. In brief, Short's Wang resin cleaves at a different position than do the polymeric reagents of the claimed invention.

A key feature of the polymeric reagents of the present invention is that the covalent bond between the acid labile isonitrile and the linker moiety cleaves when treated with acid. In this regard, the Examiner's attention is directed to the specification at page 7, lines 16-18, where it is disclosed that an acid labile nitrile is defined as an isonitrile moiety which is cleaved from the linker when treated with aqueous trifluoroacetic acid (95%) at room temperature with a half time of less than 30 minutes. In view of the specification and examples, the person of ordinary skill in the art would readily comprehend that it is the covalent bond between the isonitrile moiety and the linker moiety which is cleaved upon treatment with acid, and that cleavage of other covalent bonds of the polymeric reagent does not occur under these conditions.

In contrast, Short's Wang resin cleaves at a different location of the molecule when compared to the claimed polymeric reagents. The Wang resin does not cleave at the covalent bond between the isonitrile and the linker, but rather at the carboxyl end adjacent to the polymer. That is, after reaction with a substrate and upon treatment with acid, the Wang resin cleaves at the carboxyl group, at the bond between the oxygen and the carbonyl group. The resultant compound has a pendant R<sup>2</sup> substituent of the structure -CH<sub>2</sub>-(CH<sub>2</sub>)<sub>m</sub>-COOH. The bond which is cleaved according to Short is illustrated in Figure 1 below.

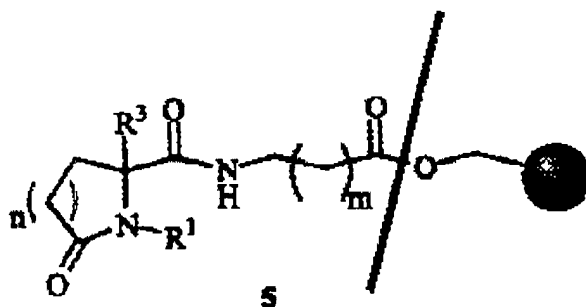
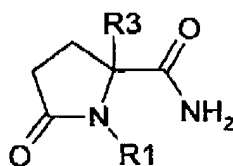


Figure 1: Cleavage of Wang resin according to Short

If a polymeric reagent according to the present invention were used in place of Short's isocyanide bound Wang resins, a different bond would be cleaved upon treatment with acid, and a different compound would be obtained. This product would have the structure below, corresponding to a lactam 1 wherein the  $R^2$  substituent is hydrogen:



Therefore, the isonitrile bond which is cleaved in the claimed reagents is not the bond which is cleaved in Short's Wang resin. Thus, Short fails as an anticipatory reference since it does not disclose each and every feature of the claimed invention. Withdrawal of the rejection of claims 1 and 13 under 35 U.S.C. §102(b)

## VII. Withdrawal of the Restriction Requirement

In view of the preceding Section VI and the arguments establishing the novelty of the claimed invention over the Short reference, Applicant respectfully requests the Examiner to reconsider the basis for the restriction requirement of record. Pending claims 1-16 share the same special technical feature, i.e., the covalent bond between the linker moiety and the isonitrile moiety cleaves when treated with acid, which is not disclosed or suggested by the Short reference. Thus, the claims of Groups I-IV are linked by unity of invention.

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The Examiner is requested to withdraw the restriction requirement as to Groups I-IV and to search and examine claims 1-16 in the present application.

**SUMMARY**

Upon entry of this Amendment, claims 1-5 and 13 are pending. Applicant requests the withdrawal of the restriction requirement as to Groups I-IV and examination of claims 1-16 in the present application

Applicant submits that the invention of claims 1-5 and 13 has been distinguished over the cited prior art, and that the pending claims are in condition for allowance, which action is earnestly solicited.

Authorization is hereby given to charge any fee in connection with this communication to Deposit Account No. 23-1703.

Dated: Oct 20, 2003

Respectfully submitted,

Andrew Fessak

Andrew Fessak  
Reg. No. 48,528  
Agent for Applicant

Customer No. 07470  
White & Case LLP  
Direct Line: (212) 812-8437

Enclosure: Copy of Abstract as originally filed  
Copy of return postcard stamped by OIPE evidencing receipt of Abstract

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